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(Adopted September 16, 1992)

9-7-100 GENERAL

9-7-101 Description: This rule limits the emissions of nitrogen oxides and carbon monoxide from industrial, institutional, and commercial boilers, steam generators, and process heaters.

9-7-110 Exemptions: The requirements of this rule shall not apply to the following:

110.1 Boilers, steam generators, and process heaters with a rated heat input less than 10 million BTU/hour, if fired exclusively with natural gas, liquefied petroleum gas, or any combination thereof.

110.2 Boilers, steam generators and process heaters with a rated heat input less than 1 million BTU/hour fired with any fuel.

110.3 Boilers, steam generators, and process heaters that are used in petroleum refineries.

110.4 Boilers used by public electric utilities or qualifying small power production facilities, as defined in Section 228.5 of the Public Utilities Code, to generate electricity;

110.5 Waste heat recovery boilers that are used to recover sensible heat from the exhaust of combustion turbines or reciprocating internal combustion engines;

110.6 Kilns, ovens, and furnaces used for drying, baking, heat treating, cooking, calcining, or vitrifying.

9-7-111 Limited Exemption, Low Fuel Usage: The requirements of Sections 9-7-301, 302, and 303 shall not apply to the use of any boiler, steam generator, or process heater with an annual heat input less than 90,000 therms during each consecutive 12-month period after July 1, 1993, or that accepts a limiting condition in their operating permit to limit the annual heat input to less than 90,000 therms, provided the requirements of Sections 9-7-304 and 504 are satisfied.

9-7-200 DEFINITIONS

9-7-201 Annual Heat Input: The total heat input of fuels burned by a combustion source during any consecutive 12-month period, as determined from the higher heating value and cumulative annual usage of each fuel.

9-7-202 Boiler or Steam Generator: Any combustion equipment used to produce steam or to heat water.

9-7-203 British Thermal Unit (BTU): The amount of heat required to raise the temperature of one pound of water from 59^{o} to 60^{o}F at one atmosphere.

9-7-204 Heat Input: The heat of combustion released due to burning a fuel in a source, using the higher heating value of the fuel. This does not include the sensible heat of incoming combustion air.

9-7-205 Heat-Input Weighted Average: The heat input of the gaseous fuel per unit time divided by the total heat input per unit time and the heat input per unit time of the non-gaseous fuel divided by the total heat input per unit time. The calculated fractions are used to calculate the applicable weighted average ppmv emission limit of Section 9-7-303.

9-7-206 Higher Heating Value (HHV): The total heat liberated per mass of fuel burned (BTU per pound), when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to their standard states at standard conditions. The HHV is determined as specified in Section 9-7-605.

9-7-207 **Natural Gas:** Any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume, as determined according to Standard Method ASTM D1945-64.

9-7-208 **Nitrogen Oxide (NOx) Emissions:** The sum of nitric oxide (NO) and nitrogen dioxide (NO_2) in the flue gas, collectively expressed as nitrogen dioxide.

9-7-209 **Non-Gaseous Fuel:** Any fuel which is not a gas at 68^{o}F and one atmosphere.

9-7-210 **Process Heater:** Any combustion equipment which transfers heat from combustion gases to water or process streams. A process heater does not include any kiln, furnace, or oven used for drying, baking, heat treating, cooking, calcining, or vitrifying.

9-7-211 **Rated Heat Input:** The heat input capacity specified on the nameplate of the combustion source. If the combustion source has been physically modified such that its maximum heat input is different than the heat input capacity specified on the nameplate, the modified maximum heat input, per Section 9-7-502, shall be considered as the rated heat input.

9-7-212 **Therm:** One hundred thousand (100,000) BTU's.

9-7-300 STANDARDS

9-7-301 **Emission Limits - Gaseous Fuel:** Effective January 1, 1996, a person shall not operate a boiler, steam generator, or process heater with a rated heat input greater than or equal to 10 million BTU per hour, fired on gaseous fuel, unless the following emission limits are met:

301.1 Nitrogen oxides (NOx) shall not exceed 30 ppmv, dry at 3 percent oxygen;

301.2 Carbon monoxide (CO) shall not exceed 400 ppmv, dry at 3 percent oxygen.

9-7-302 **Emission Limits - Non-Gaseous Fuel:** Effective January 1, 1996, a person shall not operate a boiler, steam generator, or process heater, with a rated heat input greater than or equal to 10 million BTU per hour, fired on non-gaseous fuel, unless the following emission limits are met:

302.1 Nitrogen oxides (NOx) shall not exceed 40 ppmv, dry at 3 percent oxygen;

302.2 Carbon monoxide (CO) shall not exceed 400 ppmv, dry at 3 percent oxygen.

9-7-303 **Emission Limits - Gaseous and Non-Gaseous Fuel:** Effective January 1, 1996, a person shall not operate a boiler, steam generator, or process heater, with a rated heat input greater than or equal to 10 million BTU per hour, fired simultaneously on combinations of gaseous and non-gaseous fuels, unless the heat-input weighted average of the emission limits specified in subsections 9-7-301.1, 301.2, 302.1, and 302.2 are not exceeded.

9-7-304 **Low Fuel Usage Requirements:** Effective January 1, 1996, a person who operates any boiler, steam generator, or process heater with rated heat input greater than or equal to 10 million BTU per hour and qualifying for the limited exemption in Section 9-7-111, or with rated heat input less than 10 million BTU per hour with the capability of firing any fuel other than natural gas or liquefied petroleum gas, shall meet one of the following conditions:

304.1 Operate in a manner that maintains stack-gas oxygen concentrations at less than or equal to 3 percent by volume on a dry basis; or

304.2 Tune at least once every twelve months by a technician in accordance with the procedure specified in Section 9-7-604; or

304.3 Meet the emission limits specified in Sections 9-7-301, 302, or 303.

9-7-305 **Natural Gas Curtailment - Non-Gaseous-Fuel:** Effective January 1, 1996, if natural gas is unavailable to use, a person shall not operate a boiler, steam generator, or process heater, fired on non-gaseous fuel, unless the following emission limits are met:

305.1 Nitrogen oxides (NOx) shall not exceed 150 ppmv, dry at 3 percent oxygen;

305.2 Carbon monoxide (CO) shall not exceed 400 ppmv, dry at 3 percent oxygen.

9-7-306 **Equipment Testing - Non-Gaseous Fuel:** Effective January 1, 1996, a person shall not operate a boiler, steam generator, or process heater, fired on non-gaseous fuel for equipment testing, unless the following limits are met:

306.1 Nitrogen oxides (NOx) shall not exceed 150 ppmv, dry at 3 percent oxygen.

306.2 Carbon monoxide (CO) shall not exceed 400 ppmv, dry at 3 percent oxygen.

306.3 Equipment testing shall not exceed a combined total of 48 hours during any calendar year.

9-7-400 ADMINISTRATIVE REQUIREMENTS

9-7-401 Compliance Schedule - Emissions and Usage Limits: A person who must modify existing sources` or equipment to comply with the requirements of Sections 9-7-301, 302, 303, 305, or 306 shall comply with the following increments of progress:

401.1 By January 1, 1994: Submit an application for any required Authority to Construct to achieve compliance with such requirements.

401.2 By January 1, 1995: Submit a status report to the APCO stating the progress of the modification or installation.

401.3 By January 1, 1996: Be in compliance with all the requirements of this rule.

9-7-402 Compliance Schedule - Low Fuel Usage Requirements: A person who must comply with the requirements of Section 9-7-304 shall comply with the following increments of progress:

402.1 By January 1, 1995: Submit a plan for approval by the APCO containing the following items:

1.1 A list of all sources with the rated heat input capacities and anticipated annual heat inputs; and

1.2 A selection of one of the three options specified in subsections 9-7-304.1, 304.2, and 304.3.

402.2 By January 1, 1996: Be in compliance with all the requirements of this rule.

9-7-403 Initial Demonstration of Compliance: By July 1, 1996, any person subject to this rule shall conduct source tests, as specified in Sections 9-7-601 or 602, for the purpose of demonstrating compliance with Sections 9-7-301, 302, 303, or subsection 9-7-304.1.

9-7-500 MONITORING AND RECORDS

9-7-501 Combinations of Different Fuels: Any person who simultaneously fires combinations of different fuels in a source with a rated heat input greater than or equal to 10 milliion BTU per hour and is subject to the requirements of Section 9-7-3-03 shall install a non-resettable totalizing fuel meter in each fuel line for each source.

9-7-502 Modified Maximum Heat Input: Any person who operates a boiler, steam generator, or process heater that has been physically modified such that its maximum heat input is different than the heat input specified on the nameplate shall demonstrate to the APCO the maximum heat input by a fuel meter, while operating the source at maximum capacity.

9-7-503 Records: Any person subject to the requirements of this rule shall keep records of the following:

503.1 Documentation verifying annual tune-ups performed in accordance with subsection 9-7-304.2.

503.2 In the event that natural gas is unavailable for use, documentation from the natural gas supplier verifying that natural gas was unavailable due to a natural gas curtailment.

503.3 Documentation verifying the hours of equipment testing during each calendar month to demonstrate compliance with subsection 9-7-306.3.

503.4 The results of any source testing required by Section 9-7-403.

Such records shall be retained for a minimum of 24 months from date of entry and be made available to District staff upon request.

9-7-504 Low Fuel Usage - Monitoring and Records: Any person who operates boilers, steam generators, or process heaters with rated heat inputs greater than or equal to 10 million BTU per hour and qualifying for the limited exemption of Section 9-7-111 shall comply with the following requirements:

504.1 Install by July 1, 1993, a non-resettable totalizing meter for each fuel that demonstrates that the source operated at or below the applicable heat input level, or receive APCO approval for using utility service meters, purchase or

tank fill records, or any other acceptable methods for measuring the cumulative annual usage of each fuel; and

504.2 Have available for inspection by the APCO by July 1, 1994, and each year thereafter, annual fuel use data and the Higher Heating Value of each fuel used, for the preceeding consecutive 12-month period. Records shall be maintained and made accesible to the APCO for a period of 24 months from the date the record is made**.**

9-7-600 MANUAL OF PROCEDURES

9-7-601 Determination of Nitrogen Oxides: The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of nitrogen oxides are set forth in the District Manual of Procedures, Volume IV, ST-13 A or B.

9-7-602 Determination of Carbon Monoxide and Stack-Gas Oxygen: Compliance with the carbon monoxide emission requirements of Section 9-7-301 and the stack-gas oxygen concentration requirement of subsection 9-7-302.1 shall be determined as set forth in the District Manual of Procedures, Volume IV, ST-6 (carbon monoxide) an,d ST-14 (oxygen).

9-7-603 Compliance Determination: All emission determinations shall be made in the as-found operating condition, except that emission determinations shall include at least one source test conducted at the rated heat input of the source, and no compliance determination shall be established within two hours after a continuous period in which fuel flow to the unit is zero or is shut off for 30 minutes or longer.

9-7-604 Tune-Up Procedures: The tuning procedure required by Section 9-7-304.2 shall be performed in accordance with the procedure set forth in the District Manual of Procedures, Volume I, Chapter 5.

(Adopted September 15, 1993)

9-7-605 Determination of Higher Heating Value: If certification of the Higher Heating Value is not provided by the third-party fuel supplier, it shall be determined by one of the following test methods: (1) ASTM D2015-85 for solid fuels; (2) ASTM D240-87 or ASTM D2382-88 for liquid hydrocarbon fuels; or (3) ASTM D1826-88, or ASTM D1945-81 in conjunction with ASTM D3588-89, for gaseous fuels.